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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 11

Application Number: 08/791,724
Filing Date: 1/29/97
Appellant(s): Pryor et al.

Timothy D. Stanley
For Appellant

EXAMINER'S ANSWER

This is in response to appellant's brief on appeal filed 12/8/99.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

This appeal involves claims 1-8, 10-17 rejected under 35 U.S.C. section 101.

Claim 9 has been canceled.

Claims 18-19 have been withdrawn from consideration as not directed to the elected invention by original presentation.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 1,2,5,10 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

No prior art is relied upon by the examiner in the rejection of the claims under appeal.

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-8, 10-17 are rejected under 35 U.S.C. section 101. This rejection is set forth in prior Office action, Paper No. 8, reproduced below.

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-8, 10-17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 1 does not claim either pre-computer process activity or post-computer process activity or a practical application in the technological arts. For that matter, claim 1 is not considered part of the technological arts. Without falling into one of these categories, the claim is not considered statutory. For instance, the preamble merely sets forth the intended use or field of use of predicting a change in the economy and does not set forth a practical application in the technological arts. The steps of the claim relating to representing decision makers, initializing the internal state of each agent, and generating and routing messages are

considered to be necessary antecedent steps to performance of the mathematical operation or determination of new values. Also, the outputting a representation of the change merely conveys the result of the operation.

While claim 2 does introduce the method into the technological arts, the claim still does not provide pre- or post- computer process activity or a practical application. The remainder of the dependent claims also do not provide pre- or post- computer process activity or a practical application but rather describe the mathematical process or determination or description of the input necessary for the determination.

Similarly, claim 10 is within the technological arts, but does not provide pre- or post-computer process activity or a practical application for predicting a change in an economy. Without falling into one of these categories, the claim is not considered statutory. For instance, the preamble merely sets forth the intended use or field of use of predicting a change in the economy and does not set forth a practical application in the technological arts. The steps of the claim relating to representing decision makers, initializing the internal state of each agent, and generating and routing messages are considered to be necessary antecedent steps to performance of the mathematical operation or determination of new values. Also, the outputting a representation of the change merely conveys the result of the operation. Similarly the dependent claims also do not provide pre- or post- computer process activity or a practical application but rather describe the mathematical process or determination or description of the input necessary for the determination.

The hardware elements of claims 16-17 are directed to a general purpose computer as described in the specification. No specific code or programming and/or no specific hardware is included to constitute a specific machine. Therefore, the underlying process is examined and is determined to be non-statutory since the process does not include pre- or post-processing steps such as a direct measurement (as made by using sensors) or a control step based upon the result. Also, the claims are not limited to a practical application since the output, or result, is not used in any practical manner or application. The claims messaging amounts to input/output necessary for the processing operations of predicting a change in the economy.

(11) Response to Argument

Concerning issue 1, pre-computer or post-computer process activity is not required and are merely examples, the examiner agrees. Pre-computer or post-computer activity is not a requirement, but such activity indicates a "safe harbor" in the analysis as suggested in the published 101 guidelines. However, as shown above and in the final rejection, the analysis did not stop with the determination of absence of pre- or post- computer activity. The rejection stated that the claims did not have pre- or post-computer activity **or** practical application. Hence, the issue stated in the brief is misleading. The examiner did not reject based on pre- or post-computer activity as necessary or state that such activity was necessary for statutory subject matter.

Without pre- or post-computer activity, the claims were reviewed for practical application, as claims that are limited to a practical application in the technological arts are considered as statutory. *State Street* provides further instruction of a practical application "test" where statutory subject matter exists with a "useful, concrete, tangible result." It is the practical application issue that is disagreed upon by the appellant and the examiner.

Concerning issue 2, all claims have practical utility and are patentable under 35 U.S.C. section 101, the appellant argues that all claims have practical application, that of predicting a change in an economy. In support of this statement, the appellant cites several patents as *prima facie* evidence that predicting an economy has practical utility. However, since the claims of the present application are at issue, not the patents, no comment will be made concerning the patents. The applicant also states the "Federal Circuit emphasized that the **threshold of the [section] 101 utility requirement** is not high and stated that an 'invention is 'useful' under [section] 101 if it is capable of providing some identifiable benefit' Juicy Whip, Inc." However, this case relates to a 101 lack of utility based on the ground that the invention was intended to deceive customers by imitating another product to increase sales. This case is not analogous to the present claims.

The appellant repeatedly states that the claims have practical application for predicting a change in the economy. The economy can be a monetary economic system or a non-monetary economy. As an example, the invention can predict economic vulnerability to variable economic influences or can be applied to a hypothetical system to predict experimental

outcomes by simulating interactions, decision rules, and options. These statements, in part, support the fact that the claims are **not limited to a practical application**. The claims are not limited to any application, the method and apparatus can be used to model any system, monetary or not, given the broadest reasonable interpretation. The indication that the invention would include modeling a hypothetical system further provides evidence of a lack of limitation to a practical application and a useful, concrete, tangible result. Secondly, the prediction is not applied or used in any way. The results are merely outputted, displayed, with no applied steps or apparatus to solve a particular problem at hand.

The appellant states that the present invention is a practical application providing useful, concrete, and tangible results, that of predicting a change in an economy. However, a prediction per se is not a useful, concrete, tangible result. The prediction, as stated above, is not used in any way and without use, a result is irrelevant. Furthermore, in looking to the specification, no example output result is provided as evidence of a concrete, tangible result. The appellant further argues that the invention models an economy- a representation of real objects and relationships using simulated actors and entities to provide results and uses examples of testing system alternatives, measuring anticipated performance or system changes, ...to determine system drivers by testing the sensitivity of simulation results to changes in input data,...etc. First of all, none of these examples are claimed. Secondly, this argument is not persuasive since the elements modeled are not necessarily real objects, but can be fictional or hypothetical "actors and entities." Thirdly, even in the case where the invention models a

real thing, modeling a real thing, per se, does not constitute statutory subject matter. For instance, the guidelines provide an example concerning noise, a real part of a signal that can cause problems in circuit function or signal analysis. In one case, a computer process that performs a mathematical algorithm that models noise is non-statutory (analogous to the present claims). In the other case, a process for digitally filtering noise using the mathematical algorithm would be considered statutory. The appellant attempts to link the prediction of changes of an economy (modeling an economy) to the latter case by stating that claim 1 "recites an economy prediction process for predicting economy changes and producing an output representation of the change in the economy, based on initial and new values of economic variables in a complex real-world system." This is unpersuasive as this argument provides no support for an active use of the prediction result and since the appellant continually throughout the brief emphasizes that the invention is a model.

The appellant argues that claim 1 does not recite a mathematical algorithm with his argument that claim 1 is limited to the practical application of predicting behavior of a specific model (that of a change in an economy). The appellant states that a simulation model is different from a mathematical or analytical model since the simulation model captures changes in the system by focusing on the behavior of individual components of the real world system. However, in the specification and dependent claims, there is an example of using probabilities in the decision rules which clearly reflects a mathematical algorithm as part of the model or simulation. Alternatively, without other specific rules, a user could use any rule which would

perform the function and which could comprise mere comparisons which is also considered mathematical (subtractions). The claims do not have to directly recite a mathematical algorithm to be considered non-statutory if the process of performing a determination or modeling or simulation is mathematical as described in the specification.

Similarly with respect to claim 1, the appellants state that claim 2 has practical application of predicting a change in a real world economy (monetary or not). Also, the method of predicting a change in an economy using a simulation model is a practical application. As discussed above, the claims are not limited to a practical application. The claims are not limited to any application. The present invention models a monetary or a non-monetary system where real or hypothetical elements are represented. The output is not used in any way. There is not indication that the display conveys useful information.

The appellant also argues that claim 2 is limited to practice on a computer with multiple processors in the practical application. The appellant did not invent any particular machine; as the specification states, a general computer can be used. The appellants' invention is directed to a model.

The appellants argue that claim 5 is limited to practice on a computer with interprocessor communication facility for routing messages and recites specific steps controlling the computer's operation and has practical application as argued with the above claims. Again, the appellants' invention is directed to a model which can be implemented on a general purpose computer, not an intra- or interprocessor communication method. The

specification, on page 5, lines 21-26 states that the method for processing the agents can be accomplished using general purpose computer: "The sequence of steps shown in Figure 3 can be accomplished using well known general purpose computers. Economies with large numbers of agents or complex decision rules can require significant computer performance. Multi processor computers can be programmed to accomplish the steps. For large numbers of agents, subsets of the agents can be assigned to each of the processors in a Multi processor computer. The processors can then process their assigned agents in parallel, reducing the overall time needed to accomplish the steps." These claims attempt to exalt form (processor communication) over function (providing input/output necessary for prediction determinations).

Concerning the argument of practical application of claim 10 as limited to a method of predicting a change in an economy using a simulation model, the above arguments made for claims 1, 2, 5 apply. The appellant also argues that the representing decision makers, initializing the internal state of each agent, and generating and routing messages are not necessary antecedent steps, but are necessary steps in the appellants' novel process that represents complex economic interactions by a specific type of model. This statement confirms that the steps listed are necessary antecedent step for performing the modeling. These steps amount to typing in various parameters (which object is to be modeled, i.e. a household, the bank account balance of the household, for example) and transferring the input to software which needs the input for processing. The appellants also emphasize that the

process involves a specific type of model. Clearly this is not the case. The specification provides no support for a specific type of model, but rather a general model including general decision rules, general internal states, for any type of monetary or non-monetary system.

The arguments presented for claims 16 and 17 relate to use of a Multi processor computer for predicting a change in an economy, use of a simulation model, and use of a specific type of model. These features have been discussed in relation to claims 1, 2, 5, and 10, and the examiner's arguments hold for these claims as well.

Dependent claims 3-4, 6-8, 11-15 set forth examples of decision makers which are represented and that agent learning is performed. Again, in the case of set decision makers, these may or may not be real entities. The appellants argued that the system can model real or hypothetical systems. In either case, it is maintained that the output is not used in any way to solve any problem. The agent learning refers to updates to inputs necessary to software performance.

Concerning issue 3, claim 1 is within the technological arts, the appellants argue that claim 1 meets this criteria. A question is provided in the guidelines as to whether the invention is within the technological arts, i.e. is it a computer-related invention. In this case, the specification states that the method "can" be performed using a well known general purpose computer; not that it is performed using a computer. Giving the claims the broadest reasonable interpretation, claim 1 can be interpreted as being a thought process, or abstract idea, or a series of decisions performed by hand. According to the guidelines, those claims

which do not fall into the category of technological arts may be treated using the Freeman-Walter-Abele test where the claims are examined keeping in mind that claim language constituting necessary antecedent steps and insignificant post solution activity would not bring the claims into the statutory realm. This determination was made with regard to claim 1. As stated above, the representing, initializing, and routing steps are necessary to the performance of the model and the outputting step only provides a display of the result and not used as according to the test.

Concerning the last issue, the appellants argue that claims 16 and 17 are directed to a specific type of computer with specific physical structure (multiple processors is a specific type of computer). As discussed above, the specification states that the modeling can be performed using a well known general purpose computer which includes Multi processor computers which perform parallel computing. This description encompasses any and every machine for performing the modeling. With this determination, it is examination practice to consider the underlying method for a statutory determination. Also as discussed above, the underlying method, the true scope of the invention, is a method for modeling an economic (monetary or non-monetary) system which is not limited to any specific, practical application and does not provide a useful, concrete, tangible result.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Melanie Kemper

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PRIMARY EXAMINER

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